

# CHRONIC NASAL CATARRH

*(RHINITIS CHRONICA)*

A CONSIDERATION OF ITS VARIETIES, PATHOLOGY,  
ETIOLOGY, AND COMPLICATIONS,

WITH SOME REMARKS UPON THE METHODS OF  
TREATMENT NOW IN VOGUE.

BEING THE THESIS FOR GRADUATION

SUBMITTED BY

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APRIL 1893.

thesis for the degree of  
Doctor of Medicine. I  
further declare it to  
have been composed by  
myself.

I am, dear Sir,

Yours faithfully

Reginald Owen Horsley

46 St. Andrew's Row  
Canterbury  
29 April 1893

To The Dean  
Of The Faculty of Medicine  
University of Canterbury

Dear Sir,

I have the honour  
to hand you with this  
letter a paper upon  
"Chronic Nasal Catarrh"  
which I beg to submit  
to your approval as my

CHRONIC NASAL CATARRH - Rhinitis Chronica -

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3.

A TABLE

SHOWING THE VARIOUS SUBDIVISIONS OF THE SUBJECT.

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I

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It will be unnecessary to do more than briefly outline the more striking points in the construction of the Nasal Fossae; but it is really important, and essential to a proper understanding of the subject that some time be devoted to the consideration of the mucous membrane which lines these cavities, and of the varied and delicate elements of which it is composed.

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GENERAL FEATURES:-

The Nasal Fossae are two sinuous cavities, separated from one another by a slender lamella, or plate, the Septum, osseous behind, and cartilaginous in front, which is placed antero-posteriorly.

Above the Fossae is the anterior third of the base of the brain; below them the buccal cavity; and on either side of them the orbits and the zygomatic fossae.

Communication with the outer world is established by means of the oval apertures of the nostrils at the base of the nose, while, behind, they open into the pharynx by two quadrilateral apertures, of which the long axis is vertical.

Considered as a whole, each Nasal Fossa is a cavity enclosed by six surfaces, or walls.

THE SUPERIOR WALL, OR ROOF:-

The superior wall, or  
roof

roof, contains the cribriform plate of the ethmoid bone, giving exit to the ramifications of the olfactory nerve, the perforations being for the most part filled up by the mucous membrane, in the substance of which the terminations of the nerves lose themselves.

Behind are the irregular openings into the sphenoidal sinus.

#### THE INFERIOR WALL, OR FLOOR:-

The inferior wall, or floor, of each Nasal Fossa lies horizontally in the antero-posterior direction, a fact which should be borne in mind as of clinical importance during instrumentation of the anterior part of the Fossae.

#### THE ANTERIOR AND POSTERIOR WALLS:-

The nose and the nostrils, or, more technically, the Vestibules of the Nasal Fossae, occupy the anterior aspect, while on the posterior are found the square-shaped apertures communicating with the pharynx.

#### THE INNER WALL:-

The inner wall, or septum, only comes to be of importance when its direction is abnormal, or its condition pathological.

#### THE EXTERNAL WALL:-

Most important and interesting for the purpose of this essay is the external wall, the pathological condition of which plays so large a part in the different varieties of Chronic Nasal Catarrh.

The outline of this surface is uneven, having a somewhat

somewhat terraced appearance, due to the peculiar arrangement of its bony constituents—the Turbinated Bones.

Of these bones there are three, though, if the superior be divided, a fourth may occasionally exist. Indeed, this fourth bone, or division, is, according to Zuckerkandl, invariably present in new-born children (1)—while Voltolini asserts that is found normally in the negro race. (2)

According to their position, the turbinated bones are denominated upper, middle, and lower, though in point of importance and size they must be named in inverse order.

Each is attached by its upper border to the outer wall, and, thereafter, is so coiled upon itself as to create a space—meatus—between itself and the outer wall, the floor of which space is somewhat projecting.

The inferior turbinated bone is, as just now mentioned, the most important of the three, clinically speaking. It approximates more closely to the Septum than either of the others, and during hyperaemia or hypertrophy of the mucous membrane presents the most important lesions, in certain cases coming into absolute contact with the septum itself. It is further the part of all others most liable to operative interference.

The three spaces formed between the turbinated bones are designated superior, middle, and inferior meatus respectively, and are by no means devoid of significance. Various apertures in one or other of them, for instance, allow of communication between the Nasal Fossae and neighbouring air cavities. Thus, from the superior meatus air passes into the posterior ethmoid cells, from the middle into the anterior

(1) - "Anatomie der Nasenholen," Wien, 1883.

(2) - "Rhinoscopie and Pharyngoscopie," Breslau, 1879.



anterior ethmoid cells behind, and into the frontal sinus in front by means of the infundibulum. Lower down in the same meatus is the opening of the maxillary sinus, the large size of which is hidden in the recent state by the mucous membrane which lines both it and the Antrum of Highmore.

In front of the inferior meatus is the opening of the Nasal Canal, which serves for the escape of the products of lachrymal secretion, and thus it is evident that if from any cause the inferior meatus be in any way blocked, so will also be the canal, while the tears, unable to escape by this their natural exit, flow constantly over the cheeks, the irritation causing epiphora, and not infrequently conjunctivitis. Lastly, just behind and above the posterior extremity of the inferior turbinated bone is the equally important naso-pharyngeal orifice of the Eustachian Tube. As these meatuses are of physiological, so are they of clinical importance, for they are in part concerned in the olfactory sense, too readily disturbed, and sometimes destroyed by a pathological condition of the spaces; while, again, they act as vocal resonators, so that any morbid state is sure to be reflected in the character, or rather the timbre of the voice.

#### THE PITUITARY, OR SCHNEIDERIAN MEMBRANE:-

But of greater clinical interest still is the Pituitary, or, as some call it, the Schneiderian Membrane, which lines the Nasal Fossae in their entirety, and plays a prominent part in the disease under consideration. Continuous in front with the skin of the nostrils, and posteriorly with the mucous lining of the nasopharynx, the pituitary membrane nevertheless presents great diversity in different parts, being of very unequal thickness throughout its extent. Thus, on the floor of the Nasal Fossae it is firm and resistant, over the basilar process tough, and almost fibrous, and

and in the region of the cribriform plate of the Ethmoid bone, nothing more than a soft pulp.

" A characteristic of the normal mucous membrane of the nose," says Schech, (1) " is the impossibility of making deep impressions in it with a probe, or of pushing it up in front of the probe," because " it is so closely connected with the periosteum that nowhere can the two be distinctly separated from each other." The pituitary membrane is really made up of two parts, one consisting of curving and interlacing bundles of connective tissue, and certainly most intimately attached to the periosteum; the other of various kinds of epithelial cells. This is the mucous layer proper, and is more easily detachable, though, from the fact that it is nowhere of very great thickness, and is everywhere underlain by the firm, resisting connective tissue, it is true that in the normal state it is difficult to readily leave impressions upon it.

This superficial mucous layer is made up of an abundant network of blood vessels, and is richly provided with veins. Glandular and nervous elements, the latter in great numbers, are also present in it, and it is further composed, as already stated, of various kinds of cells, some elongated, conical, or pyramidal, and furnished with from three to eight vibratile cilia apiece, the movement of which is naturally from behind forwards.

This ciliated character is wanting in two widely separated places, one, the Vestibules of the Nasal Fossae, or nostrils, where the epithelium is of the stratified character; the other, the olfactory region proper, where the mucous membrane is thicker, less vascular, and glandular. Here, among the columnar cells, and far exceeding them in number are the " olfactory cells" of Max Schultze, with their fine  
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(1) - "Disease of the Mouth, Throat, and Nose," Edin, 1886.

rod-like prolongations from their free surfaces. The nodose prolongation from their attached surfaces is claimed by Schultze to be directly continuous with the terminations of the olfactory nerve, though Exner of Vienna asserts that the so-called olfactory cells of Schultze are nothing but deviations from the ordinary columnar type, while both they and the ordinary cells are connected with fibrils of the olfactory nerve.

Very many mucous glands are present in the pituitary membrane, and by means of their secretion keep its surface continually moist. The significance of this is obvious, for, when in the presence of anything possessing an odour, what we may call the odoriferous particles adhere to the nasal membrane, and excite the sense of smell to action. Let the quantity of mucus secreted be altered in any way, increased, diminished, or the secretion arrested altogether, or, let the glands themselves be pathologically affected or destroyed, let all or any of these things happen, and at once there is a coincident alteration, arrest, or destruction of the sense of smell.

The number of these glands is extremely great, Sappey asserting that he has counted as *many* as one hundred and fifty in a square centimetre. (1) They are found all over the nasal membrane, and also in that which lines the adjoining sinuses. Thus it is easy to see how even a localised affection may excite an excessive secretion, leading perhaps to general trouble; or how a partial affection of the sense of smell may be brought about.

The glands in the Ethmoid cells are of particular interest to the nasal surgeon, because of their tendency to obstruct by becoming dilated or cystic.

#### VESSELS

(1) - " Comptes Rendus," Vol. V. 1863.

## VESSELS OF THE PITUITARY MEMBRANE:-

It is necessary to consider the arrangement of the blood vessels of the pituitary membrane, as, particularly in the case of the veins, their distribution and mode of action form the groundwork of several theories which are advanced to explain the pathological origin of hypertrophic catarrh and some of its concomitants.

The arterial supply is derived chiefly from the internal maxillary and the ophthalmic arteries, while the facial and the internal carotid send twigs to the mucous membrane under the septum and the sphenoidal sinuses respectively.

But the veins of the pituitary membrane are of greater interest. Many more in number, and occupying a far larger area than the arteries, they form a sort of varicose plexus throughout the entire extent of the membrane.

Sappey divides these veins into three groups, one going to form part of the origin of the Facial vein-anterior group - another forming two small trunks, the anterior and posterior ethmoidal veins - superior group - and a third, containing branches which pass through the sphenopalatine foramen to discharge into the venous plexus in the zygomatic fossa-posterior group-and, as offshoots of some of these veins return through the coronary sinus, a relation is established between the cranial circulation on the one hand, and that of the Nasal Fossae on the other.

The effect of this great plexus of veins in the pituitary membrane is to give the latter the character of a cavernous tissue, which, indeed, Zuckerkandl has actually demonstrated does exist all over the whole extent of the membrane, with the exception of the olfactory fissure-i.e. the narrow space lying between the free border of the middle turbinated bone and the septum. This tissue exists in greatest abundance over the anterior and lower border of the turbinated bones, and most of all over the inferior. The substance of the bones

bones themselves is perforated by the vessels and itself rendered cavernous and spongy.

That the tissue is erectile is now an established fact, numerous "nervi erigentes" being found in it, which, under certain circumstances, bring about paralysis and dilatation of the blood vessels, producing a more or less pronounced swelling of the mucous membrane. Schech points out that "of great clinical importance is the fact that the spongy tissue may suddenly increase and decrease in volume on account of the most varied kinds of irritation in the most distant organs. Sometimes there appear~~ing~~ red vascular swellings, obstructing the nose, which after a while disappear and leave no trace." (1)

Others, again, have shown that the same effect may be produced by psychical as well as thermal and mechanical causes, a reflex action being excited, in which the fifth cranial nerve on the one hand, and the "nervi erigentes" on the other are concerned.

But the very abundance of this vascular supply, which, under ordinary circumstances, acts so efficiently in warming the air on the way to the lungs, is often very largely concerned in the production of pathological states, as in inflammations, or in epistaxis, which, as some say is due to rupture of the cavernous tissue at various points in consequence of an increase of tension in the vessels of the head.

#### NERVE SUPPLY OF THE PITUITARY MEMBRANE:-

Nasal reflex not being under consideration, the study of the nerve supply of the pituitary membrane need not be gone into. It will be sufficient to recall the fact that the nerves

nerves of the nasal mucous membrane are of two distinct kinds, those of general sensibility, and those of special sense, the latter being derived from the olfactory nerves, the former from the first two branches of the fifth pair of cranial nerves. At the same time it is advisable to recall the clinical significance of the distribution of terminal filaments of the olfactory nerve in the pituitary membrane, because any lesion which affects the mucous membrane in places where those nerve endings are, is sure to exercise a corresponding effect, whether of alteration or destruction upon the sense of smell, a fact which has a decided bearing upon certain methods of treatment. Further, the intimate connection of the nerves proper of the nasal mucous membrane with other nerve trunks clearly explains the sympathy which exists between the membrane and parts of the body remote from it.

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THE GENERAL PATHOLOGY OF CHRONIC NASAL CATARRH  
CONSIDERED AS A WHOLE.

THE GENERAL PATHOLOGY OF CHRONIC NASAL CATARRH,  
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Chronic Nasal Catarrh is usually the outcome of an acute attack, the latter condition passing in some cases by imperceptible degrees into the chronic state without any break; while in others, a succession of acute seizures, with intervals of apparent health, is the preliminary to a final attack, which, obstinately persisting, assumes in course of time a settled chronicity. This is particularly the case where there is any constitutional taint, notably the scrofulous diathesis, children of this habit being among the most frequent sufferers.

Simple at first, Chronic Nasal Catarrh-usually if neglected-becomes capable of further development; a very marked swelling of the mucous membrane occurs, the turbinated bones become hypertrophied, and the septum takes part in the general turgescence. In some cases there follows on this condition atrophy and disappearance of the mucous membrane and the turbinated bones, while, to add to the misery of the sufferer, the disgusting accompaniment of ozæna is added to the general tale of mischief.

From this it will be seen that the division of the subject of Chronic Nasal Catarrh into three sections is a rational one, for the various phases of the malady are so distinct in their characteristics as each to possess a more or less well defined pathology of its own.

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THE VARIOUS FORMS OF CHRONIC NASAL CATARRH, CONSID-  
ERED SERIATIM.

- A SIMPLE CHRONIC NASAL CATARRH.
- B CHRONIC HYPERTROPHIC CATARRH.
- C CHRONIC ATROPHIC CATARRH.

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A SIMPLE CHRONIC NASAL CATARRH.

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## SIMPLE CHRONIC NASAL CATARRH.

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Simple Chronic Nasal Catarrh is distinguished by an abundant and persistent secretion of the pituitary membrane; by nasal obstruction; by a more or less complete loss of the sense of smell; by a certain embarrassment of respiration; and frequently by some alteration in the character of the voice.

## ETIOLOGY:-

As in other diseases, the causes which produce the morbid state are of two kinds, predisposing and exciting.

Under the first head may be reckoned certain constitutional taints, first of all the scrofulous, and after that the rheumatic and the syphilitic. Again a congenital stenosis of the Nasal Fossae, leading to the retention of the products of secretion, is also a fertile cause of Chronic Catarrh.

Under the second group of causes may be enumerated certain occupations in the pursuit of which the individual is continually forced to inhale particles of dust, or irritating vapours- e.g. the factory hands employed in the manufacture of bichromate of potash, who are always exposed to the effects of an irritating arsenical dust. Again, those who are constantly exposed to various changes of temperature, passing, as in the case of bakers, from a warm, moist chamber into a current of cold air, are often the subjects of acute catarrh, which by constant repetition, and, may be, by reason of its very frequency neglected and thought little of, takes upon itself, and remains in a chronic form. Confirmed snuff-takers and heavy smokers render themselves liable to this disease, while the presence of adenoid vegetations in the naso-pharynx, irritating by contact the mucous membrane in their vicinity, is a cause which in children, at least, is sufficiently frequent

frequent, and one which is by no means rarely overlooked. A polypus in the nasal cavity is, as Morell Mackenzie says, (1) as often the cause as the consequence of Chronic Nasal Catarrh.

Some authors maintain that the disease may be established by excitement of the generative organs, either sexual, or such as is caused by menstruation or pregnancy. Some colour seems to be given to this view by the researches of John Mackenzie, Ischwald and Arviset among others. Ischwald demonstrates the close connection between the erectile tissue of the nose and the generative organs, and adds that the cavernous tissue of the nose is the starting point of several reflexes, notably erection in a good number of cases; while, on the other hand, genital erection reacts on the cavernous tissue, making it turgid, (2).

Arviset, too, writing on the same subject, asserts that there is a close connection between the generative functions and the turgescence of the cavernous tissue, and deems it possible that in animals the tissue is destined to produce erection by reflex action at the period of "rut" (3)

Joal of Mont Dore, in a recent paper, draws attention to the same thing, shewing that there is a correlation between the nose and the reproductive apparatus, as is seen in the influence of odours on man and other animals on the genital function, and the turgescence of the turbinated bodies during the genital act, or during menstrual congestion, etc; while he goes on to point out how frequently epistaxis and masturbation are combined. (4)

#### **PATHOLOGY:-**

In simple Chronic Nasal Catarrh the  
condition

- 1-"Diseases of the Throat and Nose," Vol. 2. Lon-1884
- 2-" On the Erectile Tissue of the Nasal Fossae,"
- 3-" Study of the Erect. Tiss. of Nas. Cav.\*" Pro. Med. /87
- 4-" Genital Epistaxis," Rev. Mens. Laryn. March 1888.

\* Lyons, 1887.

condition is simply one of ordinary inflammation of the mucous membrane, which is thickened and markedly reddened, while the veins are dilated and inclined to become varicose.

Ulcerations are but seldom found along with simple Chronic Catarrh, though certain rare examples of them have been recorded. Exposure to the dust of arsenic would seem to produce this variety.

The discharge, or secretion, in Chronic Catarrh is thick, glairy, and greenish-white in colour. Excessive in some cases, it is in others almost absent. At times it becomes collected in the angles of the Fossæ, and forms dry, hard crusts of a greenish, or yellowish colour. These cause a temporary obstruction to the breathing, and, if allowed to remain, they become, according to some authors, the starting point of the calcareous deposits known as rhinoliths. The efforts of the patient to remove these crusts not infrequently produce epistaxis, and, indeed, may bring about superficial erosions of the mucous membrane. The drying up of these crusts and their decomposition often results in a foetid discharge, which, offensive though it be, must not be confounded with true ozæna. That the very unpleasant odour of this discharge is due to a bacillus seems to be proved by the researches of Hajek of Vienna, who has found in Chronic Coryza the *Streptococcus pyogenes*, and the *Staphylococcus pyogenes aureus*. (1)

Some authors have divided the disease into anterior and posterior according to the seat of greatest hyperaemia of the mucous membrane. When this happens to be in the posterior region, there is not seldom a coincident pharyngitis.

1- " Bacteria of Acute and Chronic Coryza and Ozæna," Berlin, Clin. Woch., 1888.

## SYMPTOMS:-

The earliest and most prominent symptoms of Chronic Nasal Catarrh are alteration and increase of the secretion, and difficulty of respiration owing to the swelling of the mucous membrane.

The character of the secretion is by no means constant. For instance, in some cases it is thin and fluid in consistence, and at times immense quantities of it are secreted in a single day. Some interesting examples of this will be found in Morell Mackenzie's work. (1) On the other hand, the discharge may be scanty, particularly through the day, thick tenacious, and muco-purulent. Too sluggish to escape, it collects during sleep in the posterior spaces of the Nasal Fossae, and, on awakening, the patient frequently vomits on account of the irritation of the glosso-pharyngeal nerve, which supplies the back of the velum palati, and the mucous membrane of the pharynx.

The character of the respiration is decidedly altered for the patient finding his nose more or less perpetually blocked, keeps his mouth open day and night, breathing in a heavy, laboured, and most characteristic fashion during the one, and snoring persistently through the other. The consequence of this is an abnormal dryness of the throat, which sooner or later becomes a pharyngitis.

The tone of the voice is altered, and a condition known as "speaking through the nose" is induced, with difficulty in articulating clearly such syllables as "eng" "end" "on" &c.

There is always some disturbance of the function of smell; and frontal headache, persistent or intermittent according to the condition of the nose, is sure to be present.

Some authors, notably Rumbold, (2) have gone so far as to assert that brain troubles may appear as symptoms

1- Op. cit.

2- "Hygiene and Treatment of Catarrh," St Louis, 1880.

symptoms of Chronic Nasal Catarrh, and Guye of Amsterdam has invented a new term, "aprosexia" which he applies to the symptom of inability to fix the attention on any subject, a kind of mental lassitude, which he asserts may be associated with Chronic Nasal Catarrh, owing probably, as Hingston Fox, who claims to be familiar with the symptom, puts it, to the fact that the lymphatics entering from the brain (anterior region) into the Nasal Fossae become more or less occluded, with the result that exhaustion of the cerebral centres from retention ensues. Intense depression and prostration are usual accompaniments of this condition. (1)

A symptom which indicates that the catarrhal inflammation is most intense in the posterior regions of the Fossae is a sensation as of a foreign body behind the velum palati. Indeed this is more than a mere sensation, for pellets of hard mucus collect there and refuse to be dislodged, so that the patient keeps up a perpetual sniffing and hawking, which is always aggravated when he eats, and frequently renders his presence at meals a hard matter for other people to bear.

As to local symptoms, they are not many, but they are characteristic. The injection of the red, swollen pituitary membrane is most marked; sometimes small erosions are to be seen on the orifices of the glands, and here and there the membrane may take on a shining, pearly appearance. When the affection is placed posteriorly examination with the rhinoscope may reveal granulations on the posterior surface of the velum palati at the upper part of the pharynx, the varicose condition of the small vessels giving the membrane a slaty tint.

Lastly

1- "Aprosexia and Nasal Catarrh," Lancet, I, 1888.

Lastly, a curious symptom is described by Bresgen, who says that those who suffer from chronic rhinitis experience closure of the under half of the nose in the prone position. And he affirms that this is not caused by a flow of blood to the deeper structures from gravity, but <sup>by</sup> a purely nervous influence. (1)

#### DIAGNOSIS:-

The diagnosis of Simple CHRONIC CATARRH is not difficult. Direct examination with the Nasal speculum reveals hyperaemia of the mucous membrane, and the absence of polypi or of nasal tumours. But, as Morell Mackenzie points out-in cases of severe rhinorrhoea doubt may arise, and in these it must not be forgotten that excessive discharge of watery fluid from the nose may be caused by a polypus in the antrum, or may be of reflex character, and result from disease or injury of the fifth nerve, from optic neuritis, and probably from even more remote sources of irritation - (2)

#### COURSE AND DURATION:-

Chronic Nasal Catarrh does not run a certain course and disappear. Left to itself it persists, and the longer it is so left the more obstinate does it become, resisting treatment which, had it been applied in time, would in all probability have been efficacious, and finally passing into the stage of hypertrophy.

Whatever the condition there is always a tendency to remissions during the milder seasons of the year, and exacerbations during the more severe, Chronic Catarrh in this respect responding to the same stimuli that excite and bring on an acute attack.

- 1- " Swelling of Nasal M.M. in Prone Position,"  
Deutsch. Med. Woch., 1887.
- 2- Op. cit.



## COMPLICATIONS:-

Briefly put, these may be summed as extensions of the inflammatory conditions to the surrounding parts. The mucous membrane lining the various air containing spaces being continuous with the pituitary membrane, is of course affected: one or both nasal canals may be blocked owing to the swelling of the mucous lining, and this may be, and not infrequently is accompanied by conjunctivitis. Proceeding further back, the inflammation may extend from the naso-pharynx, and around the pharyngeal orifices of the Eustachian tubes into the tubes themselves with untoward results to the hearing power; while, lastly, the pharyngeal irritation may reach to such a pitch that chronic inflammation of the tonsils may be induced.

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B CHRONIC HYPERTROPHIC CATARRH.

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## CHRONIC HYPERTROPHIC CATARRH.

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When Chronic Nasal Catarrh has persisted for some time, the pituitary membrane, which all along shewed a certain amount of swelling, becomes permanently thickened, wholly or in part, sometimes increasing to such an extent that the nose becomes completely blocked.

## ETIOLOGY:-

The first causes of Chronic Hypertrophic Catarrh are of course those concerned in the production of the simple form, the immediate causes coming to be summed up in one word - neglect. Still, it is to be remarked that this undesirable sequel occurs more frequently in patients of a scrofulous habit than in others in whom the original malady has to battle with an otherwise sound constitution. The condition is one which, frequent in children, is less common in adults, and rarest of all in the old. Indeed age seems to have a curative as well as a protective effect, for in adults when the hypertrophy does not degenerate into atrophy, it tends, sometimes even without treatment, to spontaneous cure as age advances.

## PATHOLOGY:-

Most investigators seem to agree that the cause of the hypertrophied condition of the mucous membrane is to be found in its own vascular network, the capillaries of which under the influence of inflammation dilate to such an extent that they form a series of cavernous arches or prominences, which produce the hypertrophy. Some, however, assert that the hypertrophy is the result of an excessive

excessive development of the glandular system of the mucous membrane, along with overgrowth of the superficial layer of ciliated cells. Terillon has found numerous embryonic cells in this layer, to which he attributes the hypertrophy, pointing out that the glands are rather atrophied than otherwise.

(1)

Chatellier, giving the result of a histological examination of a case in which the nasal mucous membrane was much thickened, says, (2)- its appearance was mammillated and muriform, particularly at the posterior extremity of the inferior turbinated body. The tissue much resembled that of mucous polypi, and amongst the cellular elements were seen 1- migratory corpuscles: and 2- connective tissue corpuscles, some with a single nucleus, others, larger, star-shaped, with several nuclei. Between these cells numerous interlacing fibres occurred, disposed without order, and non-fasciculated, the nature of which the author did not understand.-

But Beverly Robinson seems to come nearer the truth when he maintains that all the elements of the mucous membrane take part in the hypertrophy, the vessels dilating, the glands enlarging, the epithelial cells proliferating, and the connective tissue layer becoming infiltrated with embryonic cells. (3)

This hypertrophy, though it may be universal most frequently attacks the region below and behind the inferior turbinated body, which itself usually undergoes a considerable amount of swelling. The  
posterior

1- " Leçons Cliniques," 1885.

2- " Hypertroph. de la Muq. Nasale," Soc. de Biol./88.

3- " Practical Treatise on Nasal Catarrh," New York, 1880.

posterior end of this bone seems peculiarly liable to such enlargements, Cholewa of Berlin reporting upon no less than ninety three cases, all of them following upon Chronic Catarrh. (1)

#### SYMPTOMS:-

The symptoms of Chronic Hypertrophic Catarrh are to a very large extent those of the simple variety, allowance being made for aggravation due to the greater severity of the swelling of the mucous membrane, and the consequent (in many cases) complete blocking of the nose. The difficulty of breathing is increased, and the patient, if a child, is liable to sudden night terrors, or wakes with a choking scream, to recover its senses only after a few deep inspirations.

The secretion is more tenacious than in the simple form, and less easily removable, the patient experiencing extreme discomfort, and often becoming worn out by his desperate efforts to dislodge it.

The swollen and turgid mucous membrane is most sensitive, and bleeds readily on being probed, sometimes, indeed, too readily, the ordinary methods of examination producing copious epistaxis.

On examining the nose with the speculum the inferior turbinated is seen to be swollen and turgid, and often wearing a polypoid look, the middle and superior turbinateds perhaps taking part in the swelling, while posterior rhinoscopy often reveals a curious mulberry like appearance on the posterior extremity on the inferior turbinated, which is, however, nothing more than simple hypertrophy of the mucous membrane. The mucous membrane is further more or less swollen in its whole extent, while the inferior turbinated may encroach upon the floor of the Nasal Fossae, or even

1- "Hyp. Of Post. Ex. Of Inf. Turb. Bod., "Zeitchrift  
f. Ohrenheilk. Bd. XIX.

even come into contact with the septum, so that the passage of an instrument, such, for example, as the Eustachian catheter, becomes a matter of extreme difficulty, or impossibility, as does also an inspection of the deeper parts.

#### DIAGNOSIS:-

The diagnosis of Chronic Hypertrophic Catarrh is for the most part easy, though two sources of confusion may arise. The hypertrophied mucous membrane may be itself mistaken for a polypus, (1) though this is an error which careful examination should soon dispel, the polypoid tumour of the hypertrophied mucous membrane being observed to be usually symmetrical, and immovable when the patient shuts one nostril and blows through the other, while the probe is a great help in the differentiation. In those cases where a true polypus co-exists with polypoid hypertrophy the difference soon becomes apparent.

The second source of error is the possibility of the erectile tissue being in the erect condition at the time of examination. The probe indicating the enlarged turbinated bone is also a great help here; but if there be any doubt it may be dispelled by painting the prominence with a 10% solution of cocaine, when, if it be due to true hypertrophy, but little result will follow, whereas if it only be due to turgescence of the erectile tissue, or to this plus slight hypertrophy, all or much of it will presently vanish.

1- To illustrate the relation between true hypertrophy and polypus a case may be quoted, related by Woolen of Indiana, in which a tumour reaching half an inch below the velum palati on the right side was found. It proved to spring from the right inferior turbinated body, and to be a true hypertrophy of the normal tissues.- Inda Med. Journ. 1887.

#### PROGNOSIS:-

The prognosis, says Morell Mackenzie, is favourable, for almost every case can be cured by suitable treatment. (1) This is true so far, but in view of the complications that may arise, and the curious tendency of patients to neglect the disease for so long a time, until, indeed, it becomes a source of grave discomfort and anxiety, the prognosis cannot be affirmed to be destitute of a single element of gravity.

#### COURSE AND DURATION:-

The course of Chronic Hypertrophic Catarrh is always slow, and, up to a certain point, progressive. When the hypertrophy-untreated- has reached such a point that the nose is completely blocked, one of three things may happen. It may either remain stationary, or, as age advances, show a disposition to return to the normal, or - not so certainly - give place to atrophic catarrh.

#### COMPLICATIONS:-

A definite anaemia may be produced by the frequent epistaxis, which may continue to an alarming extent. The absolute obstruction of the nose, which so appreciably diminishes the quantity and character of the air carried to the lungs, is no doubt concerned, when it occurs in very young children, in the production of the deformity known as "pigeon-breast." Violent neuralgic pains may result from the extension of the swelling of the mucous membrane into adjoining spaces, while reflex phenomena may occur even to the extent of epileptiform convulsions from cerebral irritation, and asthma from pulmonary sympathy.

Lastly

1- Op. cit.

Lastly, Von Tröltsch points out (1) that the lumen of the Eustachian tube may be temporarily and suddenly obliterated, the spongy tissue of the posterior extremity of the inferior turbinated body pressing upon the anterior lip of the tube. This accident may happen without warning owing to a sudden rush of blood to the head, as after excess in eating and drinking.

1- " Pract. Treat. On Dis. Of The Ear," Wien, 1877.

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I I I

C CHRONIC ATROPHIC CATARRH.

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## CHRONIC ATROPHIC CATARRH.

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Chronic Atrophic Catarrh in which there is a progressive atrophy of the pituitary membrane, and a gradual partial or total disappearance of the turbinated bones used to be described under the head of Ozaena, whereas, as a matter of fact, the converse holds good, ozaena being but a symptom, though certainly a most important one, of Chronic Atrophic Catarrh.

## ETIOLOGY:-

Here, again, the starting point of the affection is to be found among the causes assigned to simple Chronic Catarrh, and to its more advanced hypertrophic form. That a previously existing hypertrophy is itself a cause of, or essential to the development of Atrophic Catarrh is today as stoutly denied by some, as it is maintained by other eminent rhinologists. In point of fact the transition, if there be one, between the one form and the other is not easy of demonstration. The argument of McBride that "those who have observed the occurrence of shrinking while the patients were under observation have in all probability been misled by the succulence of the mucosa, common in young patients, which might easily be mistaken for hypertrophy," (1) is sufficient, cogent, as is that of Bosworth (2) as to the absence of clinical records of transition, while a fairly exact observation of fourteen cases enables me to state that in only one was I able to note what appeared to be a transition taking place between the two forms. But there, I admit, I may have been

- 1- " Dis. Of The Throat, Nose, And Ear," Edin., 1892.
- 2- " Dis. Of The Nose & Throat," Vol. I. N. York. 1889.

been misled by the condition of the mucosa, referred to by McBride.

Women are certainly more generally the victims of the disease than men, and the most usual age is from fifteen to twenty one, though cases are met with at much later ages, and the sufferers may be advanced in years, though, again, extreme old age is for the most part exempt.

While some contend that a special type of nose is a *sine qua non* in this affection, for instance one in which the nostrils look forward instead of downward, typifying an enlargement of the Nasal Fossae, others bring forward statistics to prove that let a nose be pug or pendent, Roman or Grecian, aquiline or retrousse, it is none the less exempt, so long as it remain a nose, from that supreme source of discomfort to the patient and distress to his friends - ozaena.

#### **PATHOLOGY:-**

This may be briefly indicated as a slow process of absorption of the nasal mucous membrane and, in extreme cases-of the turbinated bones. To such an extent does this sometimes proceed, and so enlarged do the nasal cavities become from the disappearance of their contents, that under proper illumination one can see fairly through the nose to the posterior part of the Fossae, and even the superior part of the velum palati and the walls of the pharynx, the atrophy of the mucous membrane being evident, while the turbinated bones, especially the inferior, appear like narrow bands.

As the absorption continues, and the nasal cavities become larger, they are seen to be filled with crusts and non adherent lumps of dry mucus, so that before long respiration through the nose becomes more or less entirely impeded. This, to be sure, is more noticeable in the young, in whom the cavities have not attained their full size, so that the shrinking of the mucous membrane does not leave them so roomy. In the

the aged the cavities are often filled with these non adherent pellets, or the membrane lined with crusts, while, nevertheless, the breathing is in no way interfered with.

#### SYMPTOMS:-

One of the most prominent symptoms of Atrophic Catarrh is a loss of smell, proceeding gradually from a slight diminution in the ability to distinguish odours to a total extinction of the sense. That this is not in part fanciful is the more readily understood when the patient is the victim of ozaena-not always present-for then, repugnant, almost loathsome as he becomes to his dearest friends, the poor sufferer is unable to discern the intolerable stench which causes them to recoil from him with ill-concealed disgust.

As a rule nasal secretion is not increased, the patient often going for days without blowing his nose. The fact is that the cavities of the nose are filled up with crusts and lumps of mucus, which are formed faster than they are expelled, and such secretion as there is is arrested behind these crusts, itself in time hardening and adding to the general obstruction. When these crusts are examined they are found to be of a greenish colour, thick and rather firm in consistence, and made up of layers super-imposed one above the other. It is no easy matter for the patient to eject these accumulations, and he often produces a sore by his efforts to do so by what may be termed "digital expression," but such a sore must not be confounded with ulceration, which is never present in Atrophic Catarrh as a natural outcome of the disease. When it is remembered that these decomposing crusts may lie for days in the Nasal Fossae, it is not difficult to trace the origin of the evil odour so characteristic of ozaena. The secretion while yet in fluid form is always purulent, and is yellow or greenish colour

Frontal headache, a certain amount of dryness of the throat, sometimes, indeed, a sub-acute pharyngitis, and some difficulty of deglutition are further symptoms of this malady, the first and second being probably due to the same cause, the passage of un-warmed air to sensitive parts.

On examining the nose with the nasal speculum the appearance of the parts is characteristic. The mucous membrane varies in colour, or, rather, in shade, ranging anywhere from bright to dull red, intermediate tints of greyish or pale red being seen. The colour in fact varies with the circumstances under which the nose is examined, and the condition of the parts at the time. Colour apart, the mucous membrane is wrinkled, thrown into folds irregular, or nipple-like projections, with here and there little pimply points of inflammation-not ulceration, for true Atrophic Catarrh is always un-accompanied by such. In the event of definite ulceration being observed, - a self-inflicted sore being eliminated- one has most probably to deal with the grave states of syphilis (if the bones and cartilages are affected), scrofula or tuberculosis. The membrane which covers the septum presents a precisely similar appearance. But of all the symptoms associated with Chronic Atrophic Catarrh, the most prominent, noticeable and distinctive is ozaena. Though but a symptom, it is one of such importance as to merit a paragraph to itself.

#### OZAENA:-

Whereas, at one time, whenever there occurred a foetid discharge from the nose the term ozaena was at once applied to it to indicate not a symptom, but a disease proper, the cause being quite an unconsidered element, now-a-days it is held, almost without contradiction that genuine ozaena is only present, and then merely as a symptom, in Chronic Atrophic Catarrh

Catarrh. I say " then only as a symptom," because it is not always present in this disease. But its absence, on the other hand, is no contradiction to its claim to be associated with Atrophic Catarrh: it simply means that up to a certain stage it may be absent and that stage once passed, the disease once having attained its full development, ~~and~~ the dreadful symptom appears in its full intensity.

Foetor is certainly a characteristic of other morbid states, occurring when diseased bone is present in, or in the region of the Nasal Fossae, or when the patient is the subject of one or other of the several diseases which, affecting the nose locally, give rise to ulcerations - e.g. scrofula or syphilis - but " genuine ozaena," to use the term applied to it by Schech (1) is a definite pathological condition, as Roth puts it, (2) saying well " The term ozaena dates from an age when an important symptom was mistaken for an actual disease: now-a-days, thanks to anatomical progress and clinical observation, we have been able to recognise in ozaena a pathological state as definite as that expressed by the terms icterus or dropsy."

True ozaena, then is the effect of what? Of a Chronic inflammation of the mucous membrane of the nose, and to be definite, of the chronic atrophic form of inflammation, and, moreover, it is not to be associated with constitutional states, or local ulcerative conditions, because in ever so many cases neither the one nor the other is to be found to account for its presence.

As to the underlying cause of ozaena, it is a point which still remains to be settled. One set of investigators, of whom Zaufal and Gottstein are perhaps the

1- Op. cit.

2- " Bullet. Gen. de Therap. Med. Chir. & Obst., "Paris, 1884

the chief. hold that it is due to an over enlargement of the Nasal Fossae, whether congenital (Zaufal) or produced by Chronic Atrophic Catarrh (Gottstein) The formation of the cavities having thus been altered, the air in its passage to and fro does not act with sufficient force to expel the mucous secretion, or, rather, to propel it to the anterior part of the nose; and thus it collects in the Fossae, forming decomposing crusts, as above indicated.

Others, again, arguing that the odour disappears when the nose is properly cleansed, declare that it is the character of the secretions which must be investigated, while, of course, the army of workers in the field of Bacteriology have advanced skirmishers to prove that a bacillus is at the bottom of it all. Walb is one of these: he denies that the foetor is caused by the atrophy, and gives all the credit to a micro-organism. (1) Hajek says that Friedlander's coccus is frequent enough, but the bacillus foetidus is a constant and specific organism, cultures of <sup>it</sup> in gelatine yielding the special odour of ozaena. (2)

Schech, holding to the theory of dilated nasal cavities with atrophy, couples his remarks with an almost positive assertion in favour of some diathesis.—"I, at least," he says, "do not remember a single case of genuine ozaena in which the patient did not exhibit traces of anaemia, chlorosis, scrofula, or tuberculosis." (3) On the other hand, Noquet of Lille in a statement regarding thirteen patients affected with ozaena, made out no distinct appearance of scrofula in any, an entire absence of syphilis, a lymphatic tendency in some, and vigorous health in many.

(4)

Bosworth

- 1- "Clin.Rem.on Dis.Of Nose & Phar.," Bonn, 1883
- 2- Op. cit.
- 3- Op. cit.
- 4- "Some Consid.On Chron.Rhin.," Rev.Mens.Laryn./87



Bosworth is as positive as Schech, but in the opposite view, that ozaena in no way depends upon any constitutional dyscrasia, but avers that the purulent rhinitis of children is "in every case a cause of, or the primary stage of the atrophic form." (1) My own observation of fourteen cases leads to a conclusion opposed to both "never" and "always," for while in nine a history of what appeared to have been a purulent rhinitis was established, in only three was any dyscrasia - scrofula-found, and the remaining two, along with all those who had apparently suffered from purulent rhinitis, were in the rudest health. It therefore appears that the etiology of ozaena has yet to be established, so far as a constitutional dyscrasia affects the question.

One more symptom, or, perhaps, more strictly a complication associated with ozaena is acne. This is certainly not present in every case, and when it is, Seiler explains it by saying that, as the cavernous tissue of the nose is absent, or greatly diminished, and very little or no relief is afforded for the excessive blood pressure on the skin of the face the result of this is acne, which disappears, he adds, on the reformation of the cavernous tissue. (2) For my part, I have never observed the symptom on the one hand, nor, on the other, have I ever seen either in my own cases, or in those of others which I have been privileged to examine, the slightest attempt at reformation of the atrophied tissue; and I am strongly of opinion that this never takes place in genuine ozaena.

1- Op. cit.

2- "Chron. Rhin. as an Etiol. Factor of Acne," Med R  
1887.



## DIAGNOSIS:-

The diagnosis may be inferred from what has been said of the pathology and symptoms. Of course the speculum reveals the atrophied condition of the mucous membrane and the turbinated bodies, while there is no reason to suppose that the odour of ozaena will escape unnoticed. The presence of crusts, and the condition of the pharynx are further aids, and for the rest, by a process of exclusion, necrosis, syphilis, and other ulcerative conditions are got rid of, and a correct diagnosis arrived at.

## PROGNOSIS:-

Bad is the best that can be said. So far as our knowledge goes at present no cure for Chronic Atrophic Catarrh can justly be said to exist; no cure, that is to say, for the basal disease; no means by which elements once vanished can be induced to re-appear. At the same time, the prognosis is extremely good as to the mitigation or obliteration of the most unpleasant accompaniments of the disease, provided that the treatment be carefully regulated and persistently carried out.

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41.

IV

REMARKS UPON THE METHODS OF TREATMENT NOW IN VOGUE.

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## REMARKS UPON THE METHODS OF TREATMENT NOW IN VOGUE.

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During the consideration of the various forms of Chronic Nasal Catarrh all reference to the question of treatment has been purposely omitted, because, as the treatment of the three forms runs to some extent upon parallel lines, and unnecessary amount of repetition may be avoided by dealing with it in a special section.

## GENERAL, OR CONSTITUTIONAL TREATMENT:-

There is no need to discuss this at any length. The value and importance are well known of treating morbid constitutional states along with local manifestations of the same, as is also the hopelessness of good results from local treatment alone in such cases, or at least in the majority of them. While, therefore, douches, insufflations, pigments and caustics may be locally employed, constitutional treatment must on no account be neglected.

## SPECIAL OR LOCAL TREATMENT:-

The pursuance of local treatment in the various forms of this disease has for its objects the prevention of the retention of secretion in the Nasal Fossae, as well as in the case of ozaena the subjugation of the foetor; and, further, the restoration, so far as may be, of the altered mucous membrane to its normal state.

Towards the attainment of these ends there may be employed remedial agents in the form of douches, insufflations, pigments, ablations, cauterisations, &c.,  
and

and these will now be considered in detail under their various headings.

#### NASAL DOUCHES, SPRAYS AND IRRIGATIONS:-

The object of the nasal douche is mainly the thorough cleansing of the Nasal Fossae by washing away the secretions that may have formed, and to prevent the continuous deposit of the secretion, while to the simple solutions suitable for this purpose may be added as occasion requires, drugs of an antiseptic, deodorising, astringent, or stimulating character. It should, however be borne in mind that no drug can reasonably be expected to exert its action in a satisfactory manner upon a surface not previously thoroughly cleansed, and it appears to me that much that is counted failure may very well be accounted for by the omission of the simple but necessary precaution of directing the patient to employ an alkaline douche before proceeding to the use of more active remedies. By this means the accumulated secretions, whether purulent or not, are swept away, and the drug, be it astringent, or what it may, has at least a fair chance to prove its efficacy. Certainly the more active agent may be added to the milder solution, and this is frequently done, but, in practice, I prefer to keep the two distinct, as far as possible, even at the cost of a slight additional inconvenience to the patient. As a simple cleansing agent, I prefer nothing to the compound alkaline wash, recommended by Morell Mackenzie. (1)

R/

Sod. bicarb.

Sod. bibor.

Sod Chlorid.  $\text{aa}$  grs VII

Sacch. alb. grs XV

Sig. To be dissolved in half a tumblerful of tepid water.

When the nasal mucous membrane has been thoroughly cleansed with this or some kindred solution, then the work of direct application of some one of the class of agents indicated above may be proceeded with, according to the nature of the disease, and the necessities of the case.

There are, however, certain precautions in regard to the employment of nasal douches, which, considering that they are a form of treatment usually left to be carried out by the patient himself, cannot be too strongly insisted upon. Thus, the temperature of the solution should be very carefully regulated, for, on the one hand it is inadvisable to bathe the parts in a fluid much lower in temperature, than that of the blood, and, on the other, it is equally undesirable to much exceed that temperature, for the obvious reason that as soon as the douche is ended the outer air is at liberty to act upon a part already overheated. Again, though a certain amount of force is necessary when crusts are to be detached or accumulated secretions removed, this must also be carefully regulated according to the circumstances of each case, for, if the fluid be propelled into adjoining cavities, headache and vertigo may result, while, if it be forced through the pharyngeal orifice of the Eustachian tube, perhaps when the middle ear is already in a catarrhal state owing to the existing disease of the nose and throat, then acute inflammation of the middle ear may be very readily induced, though I do not believe that this condition is induced by the accident, save in rare instances, where the Eustachian tubes and middle ears are in a perfectly healthy state. I do not deny the possibility but I believe the actual occurrence to be infrequent. The accident should, however, always be guarded against by directing the patient to refrain from speaking or swallowing during the moments that the douche is in action, and so avoid the temporary dilatation of the Eustachian tubes. Should the douche be from any cause contraindicated,

the

the fluid may be thrown into the nose in the form of a spray, and indeed in this way many parts of the nose may be reached which the douche may leave untouched.

#### THE DOUCHE &c IN SIMPLE CHRONIC CATARRH:-

As a beginning the nasal cavities should be thoroughly cleansed for a few days with the compound alkaline wash above referred to. If there is much congestion the way for the douche may be cleared by the application of a 5-7-10% solution of cocain, with brush or spray. The susceptibility of the patient to this drug should be carefully ascertained, and it should be borne in mind that a 10% solution, applied by means of a brush, may be well endured, while a 5% solution in the form of a spray may produce physiological symptoms in one and the same patient. Association with the patient will alone reveal his idiosyncrasies, but experience has taught me that there is a large class of patients in which cocain should not be used in the evening, as, even when no more potent manifestation occurs, an intense wakefulness is induced, rendering natural sleep impossible. In such cases, too, I have observed an extreme restlessness, an apparent inability to keep still, which is extremely annoying, and sometimes not a little alarming to the patient.

Following on this cleansing process, astringents, severe in proportion to the severity of the case, may be tried; but though in cases of a mild type sprays of tannin, sulphate of zinc, chloride of zinc, and the like are not without benefit, yet when the disease has attained to an extreme of chronicity, perhaps with indications of the supervention of the hypertrophic form, they are useless except as palliatives.

#### IN HYPERTROPHIC CATARRH:-

It is in this form of the disease

disease that the dangers of the douche may receive fuller illustration than in the simple form, as, while but little opposition to the ingress of the fluid may be offered, yet the posterior nares may be fairly blocked by the overgrowth, and overmuch force be employed in the effort to overcome the obstruction. It is in these cases of Hypertrophic Catarrh, too, that a middle ear disease so often exists, and hence the risk alluded to above. On the contrary, if the douche be applied through the posterior nares as is sometimes done, it is equally necessary to make sure of the perviousness of the anterior nares, or very unpleasant results may follow from the regurgitation of the fluid into the pharynx. But as the cleansing of the part may be efficiently carried out by means of sprays, and as by ~~means of~~ neither one or the other can any permanent result be produced upon the new and firmly organised connective tissue, I see no reason why the douche with its elements of danger should be used at all. As for sprays, except to cleanse ~~and~~ palliate, it is mere waste of time to apply them with the view of working a cure, while the constant application of a strong astringent, such as nitrate of silver to such an area of the ~~mucous~~ membrane as may yet remain fairly healthy, can have only one result- and that a bad one.

#### IN ATROPHIC CATARRH:-

The dangers of the douche are here practically nil, as there is usually a clear road through the nostrils; and, as a certain forceful cleansing of the part is necessary, so in this form the douche attains its maximum value. Indeed, as I have stated above, in the present state of our knowledge we can indicate no certain form of cure of Atrophic Catarrh, and since, on the other hand, its most prominent symptom can be successfully treated, and without danger by means of the douche, the employment of the latter becomes a matter routine.

Though

Though many drugs have been vaunted as aiding in the restoration of the departed mucous membrane, all, I think that can reasonably be expected from the douche is thorough cleansing and gentle stimulation. Carbolic acid, permanganate of potash, thymol, naphthol and many others have been recommended, and of the last I find it impossible to speak in terms of praise. I used it as formulated by Ruault, (1) viz:- a 1 - 7 solution is alcohol, a small teaspoonful to rather more than a pint of tepid water. In each case where it was employed the pain and discomfort caused by it, even when preceded by a cocain spray, rendered its discontinuance necessary. I have also tried the sulphocarbonate of aluminium, but did not recommend it owing to the difficulty of its preparation in a satisfactory way. In practice, then, I am accustomed to use a douche of plain boracic acid, or, when the expense can be borne, of aceto-tartrate of aluminium. The efficacy of this latter I learnt when working in the Ear and Throat Department of the Royal Infirmary of Edinburgh. A 50% solution is prescribed, and the patient directed to add a teaspoonful or more to a pint of tepid water. The action of this is deodorising, disinfecting, and slightly stimulating. The fearful odour of ozaena, indeed, disappears like magic while it is in use; and the slightly painful sensations which mark its commencement soon disappear.

To sum up then, I have found the douche of some slight benefit in the cure of Simple Chronic Catarrh; of none whatever in the Hypertrophic, and of positive advantage in the Atrophic form in the 'cure,' so to speak, of its worst accompaniment.

1- " Archiv.de Laryngologie," 1887.



## INSUFFLATIONS:-

Though a certain amount of relief may sometimes be obtained by the use of anodyne snuffs in acute catarrh, yet it cannot be doubted that a fully established Chronic Catarrh requires a very different treatment. Though not denying the occasional value of insufflations, I agree with Lennox Browne in his denunciation of them when applied to the mucous membrane of the respiratory tract as unscientific and unphysiological. (1) There is no doubt, moreover, that unless these insufflations are followed at regular intervals by a cleansing douche, the secretions are apt to harden and cake, and may be to cause erosions.

## PIGMENTS AND OINTMENTS:-

These have this advantage that they may be accurately applied to a particular spot, if of an oily nature, and desired to act generally, they may be sprayed into the nose with the De Vilbiss spray, which is by far the most satisfactory instrument for the atomising of oils yet devised. As in a douche, the pigment may be designed to soothe, to stimulate, or to purify. Thus Seiss employs in the treatment of ozaena a pigment of thymol of four different strengths, which he conveys to the part by means of a cotton carrier. (2) This particular pigment, by the way, is condemned by Moure of Bordeaux, who finds it a painful and inconvenient method, while the results obtained are not by any means satisfactory. (3) But with pigments also the rule holds good that, while in the milder forms of disease they are beneficial and perhaps curative, having their uses in all, yet in the more advanced forms they must be replaced by stronger measures.

- 1- " Diseases of the Throat & Nose. Lond. 1892.
- 2- " Thymol in Atrophic Catarrh," Med. News. 1887.
- 3- " Jour. Of Laryng. and Rhinolog.," Lond., 1888.

## TAMPONADING:-

This is a method of treatment recommended by Gottstein with a view to the prevention of crust formation in Atrophic Catarrh. (1) The tampons, formed of wool medicated or otherwise, ~~are~~ introduced into the nose upon a screw probe after a thorough cleansing. The effect of this is that of a foreign body, and the mucous membrane is stimulated to secretion. Schech (2) denies that salicylic wool, or wool impregnated with iodoform or other drug has any advantage. The tampon is to be left in for twenty four hours, a process so irksome that few patients can be found to submit to it in its integrity.

## BUGINARIA:-

These are to the nose what medicated pessaries are to the vagina. Though Sajous claims to have obtained good results from their employment, (3) they do not seem to be in the main very effectual, while they are both dirty and troublesome.

## ABLATION:-

In addition to the uniform enlargement of the mucous membrane in Hypertrophic Catarrh, the existence of redundant tissue in the shape of polypoidal masses has been referred to, along with a marked enlargement of the posterior extremity of the inferior turbinated body. The former may be removed in a very simple fashion by means of the cold snare or the galvano-caustic loop, the free hæmorrhage being easily controlled. But the amputation of the posterior  
end

1- " Berlin Klin. Wochenschr.," 1887.

2- Op. cit.

3- " Dis. Of The Nose And Throat," Philadel., 1889.

end of the inferior turbinated body is quite as difficult an operation as the other is easy. If the mucous membrane be uniformly hypertrophied, such an operation will be pretty well impossible until the nose has been cleared from front to back, and even then the adjustment of the loop in position is no trifle. In the first of the two operations of this sort which I have performed, I fell back, after repeated efforts upon the galvano-caustic point: but in the second I had some needles made after the pattern recommended by Jarvis, (1) and with one of these and his ecraseur succeeded in removing a small piece of the hypertrophied tissue to the great relief of the patient's symptoms.

#### INTUBATION:-

Goodwillie recently advocated the use of tubes of various sizes in the treatment of hypertrophic catarrh after a certain amount of the hypertrophied tissue had been removed. On the principle of stricture dilatation he begins with the smaller and proceeds to the larger tubes, and he claims that after they have been worn for some time they cure by effecting absorption. (2)

#### CAUTERISATION:-

This, whether taken alone, or as an adjunct to one or another of the methods detailed above, I believe to be the most effectual method of permanently curing, or vastly relieving the various forms of Chronic Catarrh. In the simple variety, when the congestion is so violent that ordinary astringents are of little or no use, the application of a chromic acid bead, or the galvano-caustic point to various parts of the membrane will always succeed. In the hypertrophic form, after the too redundant polypoidal

1- " New York Med. Rec. Vol. XXI.

2- " New York Med. Journ.," 1887.

polypoidal, pendulous growths have been snared away, cauterisation may be employed with the greatest advantage in the still further reduction of the hypertrophied tissues. Whether chromic acid or the galvano caustic point be used, must depend upon the views of the operator, but personally, I prefer the latter, notwithstanding its inconvenient habit of occasionally failing to act at critical moments, as distressing symptoms not infrequently follow the use of the chromic acid, whereas, in the case of the galvano-cautery, the operation upon a cocainised surface is absolutely painless, and is followed by no unpleasant after effects.

As soon as the hypertrophy has been so far reduced that the patient's life is no longer a burden to him the sittings should be suspended and the course of events watched. If the relief be permanent, the case may be pronounced a cure, notwithstanding that the speculum reveals the existence of a certain amount of hypertrophy still remaining, the mere alteration of the appearance of the interior of a nose from what it ought not to be to something the surgeon supposes it ~~ought~~ to be, being entirely unjustifiable. As regards the treatment of Chronic Atrophic catarrh by the galvano-cautery, I can only say that any benefit which has appeared to result in those cases in which I have used it has been of the most temporary character; yet the mere fact that a certain improvement has followed, and the secretion of the mucous membrane been ever so slightly checked, justifies its cautious use.

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12-	"	38----	"
13-	"	19----	ISCHWALD
14-	"	50----	JARVIS.
15-	"	19----	JOAL.
16-	"	19----	Mackenzie, Morell.
17-	"	21----	" "
18-	"	23----	" "
19-	"	30----	" "
20-	"	43----	" "
21-	"	33----	McBRIDE.
22-	"	48----	MOURE.
23-	"	38----	NOQUET.
24-	"	27----	ROBINSON, BEVERLY.
25-	"	37----	ROTH.
26-	"	47----	RUULT.
27-	"	21----	RUMBOLD.
28-	"	49----	SAJOUS.
29-	"	10----	SAPPEY.
30-	"	9----	SCHECH.
31-	"	12----	"
32-	"	37----	"
33-	"	38----	"
34-	"	49----	"
35-	"	39----	SEILER.
36-	"	48----	SEISS.
37-	"	27----	TERILLON.
38-	"	31----	TRÖLTSCH von.
39-	"	7----	VOLTOLINI.
40-	"	38----	WALB.
41-	"	29----	WOOLEN.
42-	"	7----	ZUCKERKANDL.